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Original Article

Biotransformation potentiality of *Eisenia foetida* for beneficial eco-friendly technology for improving soil fertility

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Abstract

The improvement of soil quality with the incorporation of Vermicompost prepared from four different waste materials like cow dung (V1), leaf litter (V2), home garbage (V3) and sugarcane husk (V4). Vermicompost improved electrical conductivity and cation exchange capacity of the applied soil. The content of organic carbon, total nitrogen, total phosphorus, available potassium and micronutrients were increased significantly. The most common earthworm used in vermicomposting is *Eisenia foetida*. The rate of decomposition of different types of Vermicompost in soil was not uniform. The rate of decomposition of V1 was most rapid followed by V2, V3 and V4 in decreasing order. However, V1 retained maximum amount of organic carbon. V1 resulted in the highest increased followed by V3, V2 and V4 respectively. V2 and V3 exerted almost similar effect in this regard while V1 was superior in this respect. All of the Vermicompost caused a significant increase in the content of available micronutrients status of the soil. Addition of V1 released maximum amount of available Fe, Zn, and Mg in soil on the other hand, V4 released minimum amount of the same. V3 liberated maximum amount of available copper while V2 and V4 liberated almost similar amount of copper in the soil. V4 is minimal in this respect. In respect to zinc, V3 liberated minimum and V1 liberated maximum amount in the soil.

Keywords: Eco-friendly, fertility, NPK, vermicompost.

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